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CURRENT LITERATURE.

BOOK REVIEWS.

A new botany.

DR. WILLIAM A. SETCHELL, of the University of California, is another botanist to be added to the list of those who have attempted to meet the demand for a suitable text for secondary schools.[1] It goes without saying that Dr. Setchell's presentation of the subject is both scientific and complete, the only question being as to whether the text meets the requirements of the constituency for which it was prepared. It is true that some question might arise as to proportion of treatment when we find seven pages given to phyllotaxy and only two to the root, ten to the seed, and five to wind and insect-pollination, a fact which may perhaps be explained by the greater ease with which the favored topics may be fully treated in the school.

Turning to the main question we find in the preface (p. vii) "that this sketch is intended for beginners, either in the higher grades of the primary schools or in the secondary schools." An examination of the various chapters in the light of this statement awakens the suspicion that the author overshoots his audience, both in laboratory direction and definition. However skillfully approached by antecedent laboratory direction, the definition of a leaf (p. 25) as "an expanded, lateral structure of limited growth, borne on the stem and usually with a bud (or branch) in its axil" can stand to the average child of from twelve to fifteen years as little more than a form of words. The definition is a good working definition for the botanist, but is somewhat lacking as a working definition for the child. It is not a question of accuracy, merely one of adaptation. Concerning root hairs, we read (p. 18) "Examine the roots of the pea, bean, and corn, grown in loose, damp sawdust (or in a moist chamber), with a lens. Notice and sketch the root hairs. Upon what portions of the roots do they occur? Of what use are they to the plant?" This is the first mention made of root hairs, and indeed the only one save on p. 147, where reference is made to Kerner and Oliver for supplementary readings. No objection can be urged as to the content of the section quoted, but it is questionable whether as the result of such direction the average pupil in the "higher grades of the primary schools or in the secondary schools" will receive any clear cut conception of the position and function of root hairs. It is, again, merely a question of adaptation.

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[1] SETCHELL, WILLIAM A.—Laboratory practice for beginners in botany. 12mo. pp. 198. New York and Chicago: The Macmillan Company. 1897. 90 cents.

It is needless to multiply illustrations bearing upon the point under consideration. The book seems to be prepared for the teacher rather than the pupil. In the hands of a skillful teacher fairly versed in elementary botany it will be found of high value and exceedingly suggestive. In the hands of a teacher without previous laboratory experience its value would be greatly impaired, if not utterly destroyed. As an indication that the book was prepared for the teacher may be taken Appendix II, "Suggestions to the teacher," which covers 45 pages of the volume, the "laboratory practice" covering 129 pages. So large a proportion of space being deemed necessary for instructions to teachers furnishes at least indirect support to the view suggested above. It is a question as to whether pupils should be required to pay for suggestions to teachers, at least in such large measure.

After all, this is a criticism of a condition in our educational system rather than of Dr. Setchell's book. Conditions are so variant in the secondary schools of the country that the work possible for them, either as to content or extent, cannot yet be determined. The wide range of subjects taught, save in extremely exceptional cases, by every teacher in the secondary schools, precludes for the present, at least, the introduction of many of the methods of the specialist as well as many of his problems. The tendency is as mistaken as strong which is in the direction of the introduction of college and university methods into secondary schools. The chief objection to Dr. Setchell's book lies in the fact that it intensifies this tendency, that it fails to recognize the difference in conditions, indeed the difference in purpose which exists between secondary schools and universities.

The book will prove extremely helpful in elementary work in colleges and universities, and will find its way into the library of every teacher even though it does not entirely meet the needs of the secondary schools. Dr. Setchell is to be congratulated, not merely upon an honest attempt to solve a difficult problem, but also upon the production of a book which, both in form of presentation and content, is full of helpful suggestions.—S. C.

Cytological studies.

A notable volume[2] has recently come from the laboratory of Professor Strasburger. With certain important cytological problems to investigate, Professor Strasburger secured data from a wide range of forms by distribut-

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[2] STRASBURGER (Eduard), OSTERHOUT (W. J. V.), MOTTIER (David M.), JUEL (H. O.), DEBSKI (Bronislaw), HARPER (R. A.), FAIRCHILD (D. G.), SWINGLE (Walter T.).—Cytologische Studien aus dem Bonner botanischen Institut. Separatabdruck aus den Jahrbüchern für wissen. Bot. **30**: 1–268, *pl. 18*. 1897. [Heft 2 u. 3]. Berlin: Gebrüder Borntraeger. *M* 27.50.